

**U. S. DEPARTMENT OF COMMERCE**  
**Environmental Science Services Administration**

in cooperation with  
 Cotton Economic Research and  
 Bureau of Business Research of  
 The University of Texas at Austin

CLIMATOGRAPHY OF THE UNITED STATES NO. 20-41

**CLIMATOLOGICAL SUMMARY**

STATION BORGER, TEXAS

LATITUDE 35° 39' N  
 LONGITUDE 101° 27' W  
 ELEV. (GROUND) 3140 ft.

MEANS AND EXTREMES FOR PERIOD 1949 - 1969

Month	Temperature (°F)								** Mean degree days	Precipitation Totals (Inches)								Mean number of days						Month
	Means				Extremes					Mean	Greatest daily	Year	Snow, Sleet					Precip. 10 inch or more	Temperatures					
	Daily maximum	Daily minimum	Monthly	Record highest	Year	Record lowest	Year	Mean					Maximum monthly	Year	Greatest Depth	Year	90° and above		32° and below	32° and below	0° and below			
																						Max.	Min.	
(a)	21	21	21	21		21		14	21	21		21	21		14		14	14	14	14				
Jan	53.3	24.8	39.1	80	1951	-11	1959	840	0.45	0.65	1968	3.8	12.7	1966	7	1966	2	0	3	25	1	Jan		
Feb	56.5	28.2	42.4	89	1963	-12	1951	671	0.75	1.60	1964	4.9	26.0	1964	24	1964	3	0	2	20	0	Feb		
Mar	63.8	33.3	48.6	93	1963	1	1960	524	0.80	1.74	1961	3.2	19.5	1969	6	1969+	2	*	1	15	0	Mar		
Apr	74.1	44.0	59.1	99	1965	21	1952	200	1.24	2.41	1957	0.2	2.0	1949	T	1957	2	2	*	2	0	Apr		
May	81.9	53.5	67.7	102	1966	29	1954	51	3.45	3.79	1959	0	0		0		6	8	0	0	0	May		
Jun	89.8	62.5	76.2	107	1968	45	1955+	5	3.43	2.18	1965	0	0		0		6	17	0	0	0	Jun		
Jul	92.4	67.0	79.9	104	1969+	54	1952	*	4.05	3.02	1962	0	0		0		6	24	0	0	0	Jul		
Aug	91.6	65.5	78.6	106	1969	50	1961+	1	2.55	2.42	1962	0	0		0		5	21	0	0	0	Aug		
Sep	84.8	58.0	71.4	100	1959	38	1951	18	1.58	2.39	1955	0	0		0		3	9	0	0	0	Sep		
Oct	75.8	47.3	61.6	96	1968	25	1957	163	1.26	1.92	1953	T	T	1967+	0		3	3	0	0	0	Oct		
Nov	62.5	34.3	48.4	85	1966	6	1952	491	0.51	1.12	1962	2.0	10.3	1952	4	1962+	2	0	0	12	0	Nov		
Dec	53.9	27.2	40.6	82	1955	-2	1961	758	0.63	1.96	1959	3.1	7.9	1960	5	1960+	2	0	2	24	*	Dec		
Year	73.4	45.5	59.5	107	June 1958	-12	Feb. 1951	3722	20.70	3.79	May 1959	17.2	26.0	Feb. 1964	24	Feb. 1964	42	84	8	98	1	Year		

(a) Average length of record, years.

+ Also on earlier dates, months, or years.

T Trace, an amount too small to measure.

\* Less than one half.

\*\* Base 65°F

THE CLIMATE OF BORGER, TEXAS

Borger is located in the northcentral Panhandle, in the southern portion of Hutchinson County. The city lies at an elevation of 3,140 feet above mean sea level. Borger is the center of a vast oil and gas producing area. The tremendous complex of petroleum and petrochemical plants in the Borger area exceed that found anywhere in Texas, outside the Gulf Coast. Additional wealth comes from ranching, wheat farming, and recreation. Borger is a major gateway to 27-mile-long Lake Meredith, the Panhandle's principal water sports area. Lake Meredith supplements the water supply of the eleven member cities of the Canadian River Municipal Water Authority, which includes Borger. Frank Phillips Junior College is located at Borger.

Hutchinson County is high plains, broken by the Canadian River and its tributaries. Elevations range from 2,750 to 3,400 feet above mean sea level. More than 400 million barrels of oil have been produced since 1923; gas production is large. Other minerals include sand, gravel, and salt.

Thirty miles north of Borger, off State Highway 15, is the site of the Battle of Adobe Walls, fought in 1864. Col. Kit Carson—in Carson's last fight—and his U.S. troops routed Kiowa and Comanche Indians who had been molesting wagon trains and settlers. Ten years later, in 1874, Indians under Quanah Parker attacked a camp of buffalo hunters at the second site of Adobe Walls. On the second day of the engagement, William (Billy) Dixon shot an Indian from his horse at a distance approaching seven-eighths of a mile. The Indians were so astonished by the white man's marksmanship that they soon withdrew.

Borger has a dry steppe climate with mild winters. Mean annual total precipitation is 20.70 inches. Also, the climate is continental, characterized by a wide annual range in temperature. In an average year, approximately four fifths of the total precipitation falls during the warm season, May through October. Monthly and annual amounts are extremely variable. A total of 32.71 inches fell at Borger in 1950, the wettest year of record, compared to only 12.26 inches in 1956, the driest year. Warm season rainfall occurs most often as the result of thunderstorms, and in exceptionally wet months or years, a significant proportion of the total may be lost from the land due to run-off. In an average year, thunderstorms occur on 50 days at Borger. The prevailing winds are southwesterly, November through April, and southerly, May through October. Wind speeds average about 13.6 miles per hour. At noon, Central Standard Time, the mean relative humidity is estimated at 47 percent in January, 39 percent in April, 43 percent in July, and 40 percent in October. These values are representative of the

four seasons. In winter, Borger receives approximately 68 percent of the total possible sunshine; in summer, it receives about 76 percent. In an average year, free water (lake) evaporation exceeds precipitation by 44 inches.

**Winter:** The Borger area is subjected to sharp drops in temperature when cold Polar Canadian airmasses sweep southward across the level plains at speeds of 30 to 40 miles per hour. In spite of occasional low temperatures, the Borger winters are actually mild when compared to those of the Northern Great Plains. Cold spells rarely last longer than 48 hours before sunshine and southwesterly winds bring rapid warming. Nights are usually clear and cold with freezes almost every night, while days are sunny and mild. The lowest temperature of record at Borger (since 1949) is -12°F, and occurred February 1, 1951. Winter is a dry season. Precipitation most often falls in the form of light snow, which piles up in drifts, so that the snow melt is not uniformly distributed. A few exceptionally heavy snows bias the snowfall data with the result that the arithmetic mean is a poor estimate of expected snowfall.

**Spring** offers the greatest variety in weather. Warm and cold spells follow each other in rapid succession throughout March and April. Trees and shrubs may bloom too early and be nipped by a late freeze. Occasionally, strong southwesterly to northwesterly winds, in late winter and in the spring, may cause blowing dust in the area. Thunderstorms, which rarely occur in winter, are frequent in late spring.

**Summer** is one of the most pleasant seasons at Borger. While afternoon temperatures are sometimes hot, most nights are pleasantly cool. Thunderstorms are frequent, and cloudiness and precipitation, when present during the day, cause significant cooling. Evaporative-type air-conditioners operate efficiently in this relatively dry climate. The highest temperature of record at Borger is 107°F, and occurred on June 28, 1968.

**Fall**, like the summer season, is most pleasant. While the weather offers greater variety than in summer, temperatures are moderate. Rainfall decreases in the early fall, then decreases more sharply in November. Mild sunny days and clear cool nights characterize the fall season. Winds are not so strong as in the spring.

The warm season (freeze free period) at Borger averages 187 days. The mean dates of the last occurrence of 32°F or below in the spring, and the first occurrence of 32°F or below in the fall, are April 20 and October 24, respectively.

Average Temperature (°F)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1949	-	42.8	50.1	56.7	66.7	74.8	79.1	76.2	69.8	60.0	54.3	40.5	-
1950	41.7	48.3	49.8	59.1	67.7	76.1	74.8	74.5	68.1	66.4	47.5	40.8	59.6
1951	38.4	43.4	46.4	56.6	66.1	72.9	80.9	81.1	70.9	60.1	44.6	40.4	58.6
1952	44.1	44.8	46.6	56.7	66.9	79.2	80.5	80.5	73.6	61.9	44.4	38.6	59.4
1953	47.0	43.4	54.8	57.0	67.2	83.3	80.6	77.8	73.6	61.9	49.7	39.0	61.3
1954	41.6	51.9	47.5	54.8	67.2	83.3	80.6	77.8	73.6	61.9	49.7	39.0	61.3
1955	40.2	40.2	50.5	61.2	68.6	73.5	79.2	80.0	75.2	62.7	52.0	44.0	61.9
1956	40.0	38.0	51.8	57.3	72.4	79.8	79.7	79.1	75.3	64.9	46.9	44.1	60.8
1957	38.2	48.3	47.4	55.4	61.8	73.9	82.0	79.0	68.1	57.4	43.4	46.0	58.4
1958	38.9	40.1	39.1	54.3	68.8	77.7	78.4	79.7	72.3	60.4	49.6	39.9	58.3
1959	35.1	42.4	49.2	57.6	68.8	76.9	76.9	79.3	71.5	66.8	45.2	41.8	58.4
1960	34.0	34.1	45.1	61.1	66.8	77.0	76.6	78.0	71.7	60.4	48.9	37.7	57.9
1961	37.2	42.4	48.7	58.0	67.9	73.8	77.6	77.3	68.9	61.5	43.1	37.9	57.9
1962	33.6	47.5	48.4	58.9	72.6	73.6	79.0	78.9	71.5	63.5	50.0	43.2	60.0
1963	30.7	45.4	52.8	64.3	71.2	76.0	83.0	79.8	74.4	68.3	51.4	34.7	61.0
1964	40.4	34.5	47.3	60.7	70.4	76.1	82.3	79.7	71.2	62.3	48.6	40.7	59.5
1965	42.7	40.9	41.3	62.0	68.7	74.2	80.9	78.7	69.7	61.4	54.6	44.8	60.1
1966	31.8	37.7	53.4	58.1	69.8	75.3	75.3	75.3	60.3	53.2	38.2	38.2	59.0
1967	43.1	42.6	56.4	63.6	64.8	75.1	73.6	76.8	69.6	63.4	48.2	37.6	58.7
1968	39.6	39.7	51.7	57.1	64.2	76.6	78.4	77.5	71.6	64.4	46.3	37.6	58.7
1969	42.5	42.1	39.8	60.5	67.8	74.4	83.7	81.5	71.4	55.5	48.2	40.3	59.0

Total Precipitation (Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1949	-	-	0.74	1.50	5.06	5.01	4.10	3.04	1.08	1.32	0	0.56	-
1950	0.70	0.23	0.08	1.83	2.75	7.69	9.55	5.21	5.19	0.15	1.49	0.03	32.71
1951	0.27	-	0.38	2.58	7.20	2.72	1.91	2.33	0.39	1.73	1.02	0.67	-
1952	0.59	0.06	0.49	0.25	1.90	2.54	2.70	3.45	0.54	1.73	1.02	0.65	16.69
1953	0.55	0.06	0.49	0.25	1.90	2.54	2.70	3.45	0.54	1.73	1.02	0.65	16.69
1954	0.55	0.06	0.49	0.25	1.90	2.54	2.70	3.45	0.54	1.73	1.02	0.65	16.69
1955	0.55	0.06	0.49	0.25	1.90	2.54	2.70	3.45	0.54	1.73	1.02	0.65	16.69
1956	0.55	0.06	0.49	0.25	1.90	2.54	2.70	3.45	0.54	1.73	1.02	0.65	16.69
1957	0.55	0.06	0.49	0.25	1.90	2.54	2.70	3.45	0.54	1.73	1.02	0.65	16.69
1958	0.55	0.06	0.49	0.25	1.90	2.54	2.70	3.45	0.54	1.73	1.02	0.65	16.69
1959	0.55	0.06	0.49	0.25	1.90	2.54	2.70	3.45	0.54	1.73	1.02	0.65	16.69
1960	0.55	0.06	0.49	0.25	1.90	2.54	2.70	3.45	0.54	1.73	1.02	0.65	16.69
1961	0.55	0.06	0.49	0.25	1.90	2.54	2.70	3.45	0.54	1.73	1.02	0.65	16.69
1962	0.55	0.06	0.49	0.25	1.90	2.54	2.70	3.45	0.54	1.73	1.02	0.65	16.69
1963	0.55	0.06	0.49	0.25	1.90	2.54	2.70	3.45	0.54	1.73	1.02	0.65	16.69
1964	0.55	0.06	0.49	0.25	1.90	2.54	2.70	3.45	0.54	1.73	1.02	0.65	16.69
1965	0.55	0.06	0.49	0.25	1.90	2.54	2.70	3.45	0.54	1.73	1.02	0.65	16.69
1966	0.55	0.06	0.49	0.25	1.90	2.54	2.70	3.45	0.54	1.73	1.02	0.65	16.69
1967	0.55	0.06	0.49	0.25	1.90	2.54	2.70	3.45	0.54	1.73	1.02	0.65	16.69
1968	0.55	0.06	0.49	0.25	1.90	2.54	2.70	3.45	0.54	1.73	1.02	0.65	16.69
1969	0.55	0.06	0.49	0.25	1.90	2.54	2.70	3.45	0.54	1.73	1.02	0.65	16.69

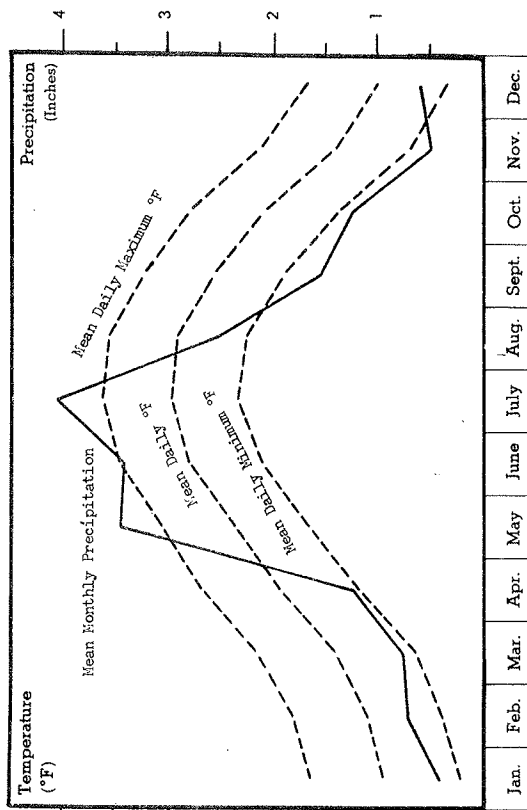
STATION HISTORY

Rainfall observations began at Borger in January 1940; temperature observations began on April 25, 1944. The station was relocated several times, but remained within a radius of one and one-half miles of the Borger Post Office Building. Mr. Paul A. Potter was appointed Cooperative Weather Observer on April 25, 1944; and served until the close of the station on November 13, 1961. The station index number was 41-0955-01.

On January 20, 1949, a climatological station, equipped with cotton region shelter, maximum and minimum thermometers, and standard, eight-inch, non-recording rain gage, was established at Buena Vista Village, 3.4 miles west of the Borger Post Office. Mr. Arthur W. Morgan was appointed Cooperative Weather Observer on that day. The station is known as Borger 3W; index number, 41-0958-01. Daily temperature and precipitation data are published monthly in Climatological Data—Texas.

ESSA State Climatologist for Texas  
Airport Administration Building  
3600 Manor Road, Austin, Texas 78723  
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Monthly Temperatures and Precipitation



Single copies of this summary are available without charge from the Bureau of Business Research, The University of Texas, Austin, Texas 78712. Quantity rates upon request.